

**BIOCHEMICAL MARKERS IN THE
DIAGNOSIS AND PROGNOSIS OF PROSTATIC
CANCER**

ESSAY

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In

Clinical And Chemical Pathology

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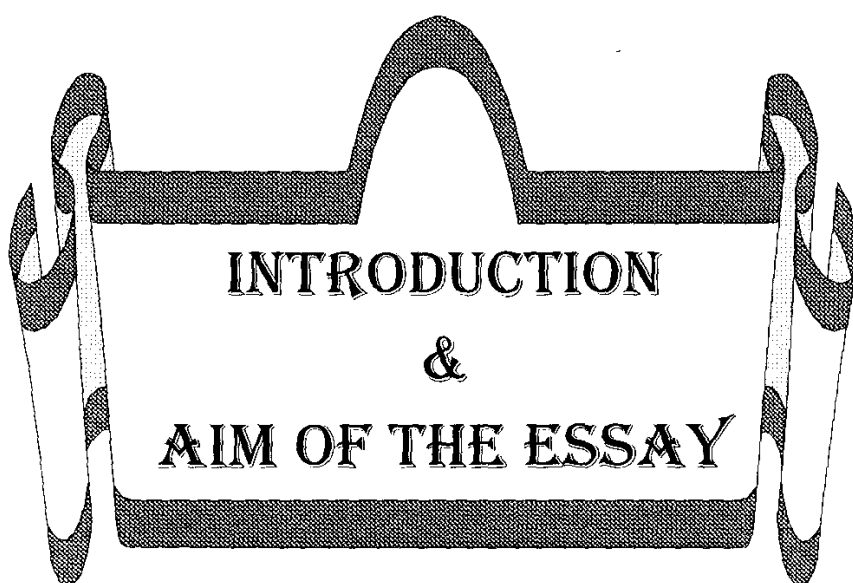
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LIST OF ABBREVIATIONS

ACT	Antichymotrypsin
BPH	Benign Prostatic hyperplasia
BSA	Bovine serum albumin
CaP	Cancer Prostate
DRE	Digital rectal examination
EIA	Enzyme immunoassay
ELISA	Enzyme linked immunosorbant assay
GSM	Gamma seminoprotein
HGKI	Human glandular kallikrein - 1
HRP	Horse radish peroxidase
ICA	Immunocytochemical assay
IRMA	Immunoradiometric assay
LLD	Lower limit of detection
M.Ab.	Monoclonal antibody
PAC	Prostate associated glycoprotein complex
PAP	Prostatic acid phosphatase
PMA	Prostatic mucin antigen
PSA	Prostate specific antigen
PSAD	Prostate specific antigen density
PSAF	Free prostate specific antigen
PSAT	Total prostate specific antigen
RIA	Radioimmunoassay
TBS	Tris. buffered saline
TPA	Tissue polypeptide antigen
TPS	Tissue polypeptide specific antigen
TRUS	Transrectal ultrasonography
TURP	Transurethral resection of prostate

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INTRODUCTION AND AIM OF THE ASSAY

The prostate gland grows slowly from birth to puberty, then rapidly to the age of 30 . Thereafter , it remains more or less constant in size until the age of about 45 when it either hypertrophies or atrophies . Benign enlargement usually occurs in men over the age of 50 years (Cuschieri , 1992) .

Cancer prostate is the commonest malignant condition in men over the age of 65 years . Prostatic cancer represents an increasing public health burden that may be controlled by early detection (Mettlin , 1993) . Digital rectal examination has been the traditional method of screening , and prostatic acid phosphatase has been used as a marker for diagnosis and therapy control of cancer (Gutman and Gutman , 1938) . But it is not sensitive , and it is instable at room temperature. Newer modalities such as transrectal ultrasound and tumour markers can identify patients with non palpable prostatic cancer and are used also in monitoring the prognosis of prostatic cancer (Roetzheim and Herold , 1992)

In 1979 Wang and his colleagues seeking a better marker for prostatic cancer , isolated prostate specific antigen (PSA) from prostatic tissues . They found that elevation of serum PSA occurred in both prostatic cancer and benign prostatic hyperplasia . They also reported that PSA was an important prognostic marker for monitoring patients with prostatic cancer . More recently, other tumour markers have been suggested to have unique features that could augment current diagnostic and therapeutic modalities. These include : 7E11-C₅ glycoprotein (Horoszewicz and Coworkers , 1987) , prostatic mucin antigen (Beckett et al . , 1991) , prostatic associated

glycoprotein complex (Starling et al . , 1991) , gamma seminoprotein (Verstraeten et al . , 1991) , Leu -7 (DeMatteis , 1992) , tissue polypeptide specific antigen (Marrink et al . , 1993) , human glandular Kallikrein-1 (Henttu et al . , 1994) , and c-erb- B2 (Persad et al. , 1994) .

AIM OF THE ESSAY

The aim of the present essay is to give a detailed account about the likely role of PSA in the future management of patients with carcinoma of the prostate taking into consideration the new tumour markers that may complement or even replace PSA.